

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF VIRGINIA  
NORFOLK DIVISION

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DRAGAS MANAGEMENT CORP., :  
Plaintiff, :  
v. : Civil Action No. 2:10-cv-547  
THE HANOVER INSURANCE COMPANY, :  
and :  
CITIZENS INSURANCE COMPANY :  
OF AMERICA, :  
Defendants. :

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**DEFENDANTS' MEMORANDUM OF LAW IN SUPPORT OF  
MOTION IN LIMINE TO PRECLUDE PLAINTIFF'S EXPERT  
FROM TESTIFYING AS TO WHEN DAMAGE CAUSED BY OFF-  
GASSING OF DEFECTIVE "CHINESE DRYWALL" TOOK PLACE**

Defendants Hanover Insurance Company and Citizens Insurance Company of America (“Defendants”) respectfully submit this memorandum of law in support of their motion to preclude plaintiff’s expert, Gerald Oliver Davis, from offering at trial his opinion on when the damage at issue in this case – corrosion caused by defective Chinese-manufactured drywall – took place. As discussed below, Davis should be precluded from testifying as to when the damage took place because: his opinions are speculative and inconsistent with his own data; he is not qualified to render that opinion; and his opinion on when “microscopic” corrosion took place is irrelevant. Defendants therefore respectfully request that Davis be precluded from offering a trial an opinion on when the corrosion caused by defective Chinese-manufactured drywall took place.

## I. INTRODUCTION

As the Court is aware, this insurance coverage action arises out of the installation of allegedly defective Chinese-manufactured drywall (“Chinese Drywall”) by Defendants’ insured, Porter-Blaine Corporation (“Porter-Blaine”) in 74 houses built by Dragas Management Corporation or one of its affiliates (“Dragas”). Dragas obtained a \$4.9 million arbitration award against Porter-Blaine for the costs associated with remediating the 74 homes that had Chinese Drywall in them. That award was subsequently reduced to a judgment, which Dragas now seeks to recover from Defendants in this action.

A central issue in this case is *when* the damage at issue (e.g., corrosion to copper pipes and wiring) occurred. Plaintiff claims that the damage took place when people moved into the individual houses, and was continuous thereafter. See Ex. A to Vennos Aff., Plaintiff’s Response to Defendants’ Interrogatories, Response No. 2(a). Despite taking an inconsistent position in their interrogatory response, Plaintiff intends to call Davis, a purported corrosion expert, who opines that corrosion from off-gassing of Chinese Drywall begins on a microscopic scale as soon as the drywall is installed, and that widespread damage begins once people move into the homes and begin using their heating or cooling systems, which circulate the sulfur gasses throughout the houses. Davis should not be permitted to offer those opinions because they are speculative, inherently unreliable and inconsistent with his own data. In this regard, Davis admits that:

- the mechanism of how reduced sulfide gases are generated by Chinese Drywall is unknown;
- the rate at which Chinese Drywall off-gasses reduced sulfides is dependent upon numerous variables (e.g., the number of boards of Chinese Drywall installed in a home, the location within the home of those boards, air flow, temperature, humidity, proximity of the drywall to metallic surfaces, whether the drywall is painted or wall-papered, the variability from board to board of the internal

composition of the corrosive drywall) that Davis did not account for or observe when rendering his opinion;

- he does not know what concentration of reduced sulfide gases emitted by the drywall must be reached before initiation of corrosion occurs;
- he does not know the mechanism by which the gases become corrosive to metal surfaces;
- he did not observe any of the 74 homes when the drywall was installed or when unit owners took occupancy;
- his observations of corrosion on components of metal surfaces in the 74 homes was 2-3 years after installation of drywall was complete and just after remediation had taken place in almost all 74 homes; and

Because his opinions essentially ignore the numerous variables Davis readily admits affect when drywall-caused damage occurs, and because his hypothesis as to when corrosion occurred was not tested, Davis' opinions are speculative and unreliable. In addition, Davis, a corrosion expert, not a chemist or scientist whose field of study includes the creation and migration of sulfide gasses, is not qualified to render an opinion as to when corrosion took place. Finally, Davis' opinion as to when *microscopic* initiation of corrosion took place is irrelevant as to when physical damage occurred under the policies of insurance here. For all of these reasons, the Court should not permit Davis to testify as to when corrosion took place.

## **II. LEGAL ARGUMENT**

The proponent of expert testimony has the burden of proving that proffered testimony is admissible. McEwen v. Balt. Wash. Med. Ctr. Inc., 404 Fed. Appx. 789, 792 (4th Cir. 2010). Under Federal Rule of Evidence 702, expert testimony is admissible only "if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case." Fed. R. Evid. 702. In Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993), the

United States Supreme Court charged the district courts to act as “gatekeepers” to ensure that an expert’s testimony is both relevant and reliable. *Id.* at 589; see also Peters-Martin v. Navistar Int'l Transp. Corp., 2011 U.S. App. LEXIS 2583 at \*14 (4th Cir. Feb. 9, 2011).

In discharging its “gatekeeping” function, the Court must make “a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.” *Daubert*, 509 U.S. at 592. In Kumho Tire v. Carmichael, 526 U.S. 137 (1999), the Supreme Court held that the relevant and reliable standard enunciated in *Daubert* for scientific expert testimony applied to all types of expert testimony. *Id.* at 147-48.

One prong of the *Daubert* inquiry focuses on whether the expert testimony is based on a reliable methodology. *Daubert*, 509 U.S. at 592. In determining the expert’s reliability, the district court’s focus “must be solely on principles and methodology, not on the conclusions that they generate.” *Id.* at 595. The factors that may be considered when assessing the soundness of the methodology include: (1) whether the theory or technique can be and has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error and the existence and maintenance of standards; and (4) whether the theory or technique used has been generally accepted. *Id.* at 593-94; see also Peters-Martin v. Navistar Int'l Transp. Corp., 2011 U.S. App. LEXIS 2583 at \*14 (4th Cir. 2011) (same). These factors are not definitive and that the analysis is a “flexible” one to ascertain the validity or reliability of the methodology the expert employed. Tunnell v. Ford Motor Co., 2005 U.S. Dist. LEXIS 12540 (W.D. Va. June 27, 2005) (citing *Daubert*, 526 U.S. at 593-94).

Here, Davis’ methodology is fatally flawed because he did not account for the numerous variables he acknowledges exist, and his hypothesis has not been tested such that the accuracy of

his opinions therefore cannot be confirmed.

**A. Davis Should Be Precluded From Offering An Opinion On When Corrosion Caused By Drywall Took Place Because The Opinions Are Speculative And Inherently Unreliable.**

Davis' opinion as to when corrosion occurs is unsupported by any facts or general knowledge in his field of expertise, rendering the opinion unreliable. This is exactly the type of unsupported opinion that should be precluded under Daubert and its progeny. In fact, as discussed below, his conclusions are at odds with much of the data on which his opinions are based.

Federal courts uniformly preclude expert opinions as unreliable where "there is simply too great an analytical gap between the data and the opinion proffered." General Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997) (reversing appellate court and affirming trial court's preclusion of expert opinion); EPlus, Inc. v. Lawson Software, Inc., 2011 U.S. Dist. LEXIS 7372 at \* 18 (E.D. Va. Jan. 26, 2011) (precluding expert from testifying after finding the opinions were "speculative and not based in sound economic precepts"). In Joiner, for example, the plaintiff electrician alleged that his exposure to PCB's produced by defendants caused his cancer. Joiner, 522 U.S. 136 at 137. The plaintiff proffered an expert who opined that the exposure to PCB's in mineral oil caused the plaintiff's cancer based on isolated studies conducted on laboratory animals. The Supreme Court agreed with the district court's determination that the opinions should be precluded, holding that "[t]he studies were so dissimilar to the facts presented in this litigation that it was not an abuse of discretion for the District Court to have rejected the experts' reliance on them." Id. at 144-45.

Similarly, in Bland v. Verizon Wireless, L.L.C., the Eighth Circuit affirmed a trial court's exclusion of proffered expert testimony because there was too large a gap between the "data

identified and the [expert]’s proffered opinion.” 538 F. 3d 893 (8th Cir. 2008). In Bland, the plaintiff alleged that exposure to some freon that was sprayed into a water bottle by a co-employee caused her to suffer from asthma. The trial court precluded the plaintiff’s expert from opining that the exposure to the freon caused the plaintiff’s asthma after determining that the expert lacked knowledge regarding either the level of exposure to freon that constitutes an appreciable risk of causing asthma or the specific concentration and degree of the plaintiff’s exposure to the freon. Id. at 898.

Here, Davis’ opinion must be precluded for the same reasons as set forth in Joiner and Bland. At the outset, Davis did not observe any “initiation” of corrosion in the 74 homes. He did not begin his investigation until after the homes were remediated or were undergoing remediation, which was two to three years after the drywall was installed, and under Davis’ theory then, not until years after corrosion supposedly initiated. Vennos Aff. at Ex. A, Dragas’ Responses to Interrogatories at Exhibit A (indicating that drywall was installed in the homes during 2006-2007); Vennos Aff. at Ex. D, Davis Report at p. 5 (indicating that Davis began his investigation in 2009). Further, Davis did not perform any testing himself to determine when corrosion initiates when exposed to corrosive Chinese drywall. Vennos Aff. at Ex. C, Davis Depo. at 49:6-12. Without the benefit of observing the supposed initiation of corrosion, or creating a test to observe the initiation of corrosion, Davis instead relies on articles on corrosion and his observations of components of the 74 homes that had been removed pursuant to remediation efforts.

Davis testified that his opinion as to when corrosion begins relies heavily on an article written by *Jacobs, Reiber and Edwards*, Sulfide-induced Copper Corrosion, American Water

Works Association, 90:7 (1998) (attached at Exh. B to Vennos Aff.).<sup>1</sup> Vennos Aff. at Ex. C, Davis Depo. at 37:23, 42:7, 49:16, 132:15. The *Jacobs* article provides the results of experiments indicating that copper piping showed evidence of black “poorly adherent scales” in “as little as 4 [hours]” **when the copper piping was immersed in water** where a hydrated form of sodium sulfide was added to the water at different pH levels. *Jacobs* at 64. Any reliance on an experiment determining that copper piping corrodes at a particular rate when immersed **in water** at various pH levels is simply not akin to corrosion that would occur **in air**. If Davis’ theory that corrosion rates in water is the similar to corrosion rates in air, then all of our cars would look like corroded shipwrecks at the bottom of the ocean. Davis admits that the presence of water accelerates corrosion of copper. Vennos Aff. at Ex. C, Davis Depo. at 141:14-25. Just as in Joiner, the facts in the *Jacobs* study are “so dissimilar to the facts presented in this litigation” that the Court should reject Davis’ reliance on *Jacobs*. Joiner at 144-45.

Moreover, Davis’ opinion should be precluded for the following reasons that are directly analogous to Bland. The parties do not dispute that in order for corrosion to occur at metallic surfaces, the following must occur: (1) some mechanism triggers corrosive drywall to emit reduced sulfide gases; (2) if the proper trigger occurs, the reduced sulfide gases that are produced must migrate from the drywall to susceptible metallic surface, and the rate of this migration depends on many factors; (3) the reduced sulfide gases that are generated must be present at a level that causes initiation of corrosion to occur; and (4) if the reduced sulfide gases are present at an appreciable level, corrosion occurs due to some chemical mechanism.

As to the first requirement for corrosion to occur, Davis admits that he does not know the mechanism that triggers reduced sulfide gasses to be emitted from drywall:

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<sup>1</sup> Davis’ Expert Report does not refer to the *Jacobs* article as a document he relied on. His reliance on the article was only elicited in deposition testimony.

Q: I believe you testified that you do not know the precise mechanism by which the drywall off-gases or by which these gases are created by the drywall, is that correct?

A: From a chemical standpoint, we don't understand the specific reactions that occur to make this happen.

Vennos Aff. at Ex. C, Davis Depo. at 43:20-44:3. Based on this admission alone, the Court should find that Davis' opinion as to when corrosion occurs is wholly unreliable. If Davis admits that he does not know the triggering mechanism that generates the essential corrosion-causing gasses to be emitted from the drywall, he cannot possibly opine as to when corrosion occurs.

As to the second requirement for corrosion to occur, Davis admits that there are at least seven variables that affect the rate at which reduced sulfide gasses (if generated at all by some unknown trigger) would migrate to metallic surfaces -- number of boards that are made of corrosive Chinese drywall, air flow, temperature, humidity, proximity of the drywall to metallic surfaces, whether the drywall is painted or wall-papered, and the variability from board to board of the internal composition of the corrosive drywall:

Q Okay. Would you agree that the amount of off-gassing in any given home will be dependent on a number of factors?

A Yes.

Q Okay. And those factors would include the number of Chinese drywall boards installed in a house?

A That would be one of the factors.

Q In other words, if a house had 90 percent Chinese drywall, you would expect to see more corrosion and corrosion sooner, perhaps, than in a house that had only one board; would you agree with that?

A "Perhaps" is the key word there. It depends on other factors, such as the airflow that occurred in that home, for

example, when that airflow initiated, the humidity in the home, and other factors.

Q Okay. And would it depend on temperature?

A Yes, because that would have an effect on the humidity.

Q . Would it also depend upon the nature of the wall coverings that were in a given house? In other words, if somebody had paint versus wallpaper, would that affect the rate of off-gassing or the amount of off-gassing?

A I think the bigger factor would be the number of wall switches and receptacles, frankly, because that would be where there would be cutouts in the drywall, and the drywall edge would be exposed, then, and more readily could release or be reacted on by air externally and moisture externally to the wallboard. I'm not sure what the effects of different coverings over the major surface area of the wallboard would be.

Q Could that be a variable?

A It might be.

Q And I take it, from one of your prior responses to one of my questions, that you would agree that the proximity of the Chinese drywall boards themselves to the copper is also a factor in when initiation will occur. Would you agree with that?

A In combination with other factors that would also bear on it that might negate that effect, but yes, that could be a factor.

Q Anything else, sir?

A There is some variability among the elemental sulfur content within the different Chinese drywall that -- and I am speaking of the Venture Chinese drywall that has been tested. There is a great variability among nondomestic

drywall, if you will, in terms of the sulfur content, but that could be a factor also.

Vennos Aff. at Ex. C, Davis Depo. at 44:19-48:10; 49:12-51:4. Davis provides nothing in his expert report to indicate that he has any knowledge whatsoever as to existence, prevalence, or non-existence of these variables in the 74 homes either when the drywall was installed in 2005-2008, or before his investigation began in 2009. In fact, when presented with scenarios involving variables that Davis admits affect rate of corrosion, Davis abandons his opinion as to the timing of when corrosion initiates:

Q: Well, what if there was only one board in that house and it was far away from any copper or silver or other metallic surface as it could possibly be and still be in the same house?

A: Well, I would expect that to take somewhat longer. That might be closer to the **thirteenth month** example failure here that I mentioned earlier versus the two-month failure period that occurred on Lot 58.

Id. at 139:3-11 (emphasis added). Again, if Davis does not know the facts associated with the variables that affect the rate that the reduced sulfide gasses migrate to metallic surfaces in the 74 homes, he can not possibly opine as to when corrosion occurs. Bland, 538 F. 3d 893 (8th Cir. 2008) (precluding expert's opinion that freon caused plaintiff's injuries where expert did not know the specific concentration and degree of the plaintiff's exposure to the freon).

Davis also admits that he does not know what concentration the reduced sulfide gases need to reach before initiation of corrosion begins, nor does he know the mechanism by which initiation of corrosion occurs:

Q: Okay. Do the reduced sulfur gases that are causing the corrosion have to reach a certain level or a certain concentration in order for damage to occur?

A: I think that would depend on the specific concern -- excuse me, the specific mechanism that causes initiation and, again, that's not known, so that's part of the puzzle of -- of the mechanism.

Vennos Aff. at Ex. C, Davis Depo. at 105:1-9; id. at 24:21-23 ("It's debatable as to the exact mechanism of how the -- the gases come to be destructive in this case."); id. at 106:23-107:5 (Q: Do you know what level or concentration of reduced sulfur gasses . . . is required for initiation to commence? A: I don't believe so."). Once again, if Davis does not know either the concentration of reduced sulfide gases required to initiate corrosion, and does not know the mechanism by which corrosion occurs, he simply can not opine as to when corrosion begins. This is directly analogous to Bland. 538 F. 3d 893, 898 (8th Cir. 2008) (precluding plaintiff's expert from opining that the exposure to the freon caused the plaintiff's asthma when the expert lacked knowledge regarding the level of exposure to freon that constitutes an appreciable risk of causing asthma).

That Davis' opinion as to when corrosion begins is unreliable is further demonstrated by his testimony regarding the 74 homes at issue in this action. For example, when asked about tarnish on a drain stopper in a home with a closing date of May 9, 2007 and a work order for tarnish dated April 7, 2008, Davis testified that he could not opine as to when initiation of corrosion began:

Q: Would it be fair to say that you cannot render an opinion as to when, presumably, between 5-9-2007 and 4-7-2008 that tarnish occurred?

A: Yes. I wouldn't know, exactly, the date. I know it depends on, I guess, the patience of the homeowner, as to how quickly they turned in the complaint that initiated this work order.

Q: That wasn't precisely my question. My question wasn't how long the homeowner lived with the condition,

assuming they lived with it for any period of time at all, the question is you can't say when that condition occurred during that, roughly, 11-month time span, is that correct?

A: **No, I can't say specifically when it initiated, specifically, on a microscopic basis.** It may have well precipitated long before --initiated long before it was noticed on a macroscale.

Vennos Aff. at Ex. C, Davis Depo. at 114:2-22 (emphasis added).

Similarly, when confronted with a situation of a homeowner who may not have used their HVAC system for some period of time after the drywall was installed, Davis retreats from his opinion that initiation begins upon installation:

Q I take it, from your answer, sir, that you believe that the use of the HVAC system is one of the critical factors in propagating the gas throughout the house. Is that correct?

A: Yes.

Q: So, for example, if somebody moved into their house in April and it's cool in the evening, but not too cold, and it's warm during the day, but not too warm, and they weren't using either the air conditioning or the heater, perhaps even had windows open, that that would affect when initiation would commence relative to when they moved in?

A: I would agree, in terms of a comparison to it, that would be a less severe situation than someone continually operating their ventilating system, the air conditioning or heating, which would be a more severe situation.

Id. at 58:25-59:17.

Even though Davis opines that AC coils are more susceptible to corrosion (Id. at 141:1-25), Davis observed at least three metal coils from AC units that were in service in homes with corrosive Chinese drywall for **8 months, 5 months, and 1 month** where Davis observed the metals were "like new." Id. at 64:20-65:8; 69:12-18. When confronted with this empirical data, Davis again retreats from his opinion that corrosion initiates upon installation of drywall:

Q: Okay. **Does that suggest to you, sir, that the time of initiation relative to occupancy date is variable?**

A: It -- it may well have been related to the -- some of these other factors that we talked about, the amount of ventilation, circulation that occurred in one home versus the other. **There is some variability caused in the amount of -- or the date, if you will, of initiation because of these other factors, such as the ventilation.**

*Id.* at 70:4-14 (emphasis added).

Davis acknowledges that there are numerous variables that would impact not only when the Chinese Drywall creates sulfide gasses, but also when those gasses would reach metallic surfaces throughout the homes in sufficient concentration to cause damage, yet his opinions essentially ignore those variables. There is, therefore, too large an “analytical gap” between the data and Davis’ opinion as to when drywall-caused corrosion takes place, his opinion should be precluded as unreliable. General Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997); EPlus, Inc. v. Lawson Software, Inc., 2011 U.S. Dist. LEXIS 7372 at \* 18 (E.D. Va. Jan. 26, 2011); Bland v. Verizon Wireless, L.L.C., 538 F. 3d 893 (8th Cir. 2008).

Moreover, Davis should be precluded from testifying as to when the drywall-caused corrosion took place because the veracity and accuracy of his opinions cannot be tested. Davis *admits* that he is uncertain whether his theory can even be tested, and suggests that there are experts in other fields, outside of his limited area of expertise, that might be able to design an experiment to ascertain whether Davis’ conclusory opinions are correct:

Q: If you were interested in determining in any given house when initiation occurs -- that is, when these corrosive gases actually get to and begin to attack the copper, could you design an experiment to test that?

A: It would be very much -- I guess you can make an attempt to do that, but there would be a great deal of variation, I would think, within a home. For one thing, how the

placement of the Chinese drywall relative to the general layout or the house plan of the home and how airflow might occur through one floor plan versus another. Also, the amount of Chinese drywall present and the amount of cutouts that you had in, for example, for switches and receptacles would also be a factor. There would be many variables to try to duplicate in a test. I think it would be very difficult to do that. Someone that was an expert on heating, ventilating, and air conditioning, I think, would probably better answer the question than I could about whether you could try to design an experiment to -- to make a realistic estimate of that. I think it would be difficult.

Vennos Aff. at Ex. C, Davis Depo. at 79-80. Under Daubert and its progeny, a hypothesis that cannot be and has not been tested is inherently unreliable. Daubert, 509 U.S. at 593 ("Scientific methodology today is based on generating hypotheses and testing them . . ."); see also, Marsh v. W.R. Grace & Co., 80 Fed. Appx. 883, 887 (4th Cir. 2003) (affirming district court's preclusion of expert opinion where expert provided insufficient verification of his hypothesis); cf Coker v. Louisville Ladder Inc., 2009 U.S. Dist. LEXIS 87054 (E.D. Va. 2009) (finding expert opinion admissible where expert tested his hypothesis as to the cause of the failure of a ladder on exemplar ladders and was able to recreate the conditions causing the accident). For this additional reason, Davis should be precluded from offering an opinion as to when the damage at issue took place.

**B. Davis Is Not Qualified To Determine When Corrosion Initiated.**

It is, ultimately, not surprising that Davis is unable to support his opinion as to when drywall-caused damage occurred, because he is a corrosion expert, not an expert on the creation or migration of sulfide gasses from drywall to copper components of a home. Put another way, Davis may be qualified to testify regarding what happens after sulfide gasses interact with certain metals, but he is not qualified to opine on *when* (relative to a fixed date, such as installation of

the drywall or the occupancy of the homes) the drywall discharged the sulfide gasses, in what concentrations, and how long it took those gasses to reach copper throughout the 74 homes.

Federal courts consistently preclude experts from testifying in a field that is outside their area(s) of expertise. In Norfolk & Portsmouth Belt Line R.R. Co. v. M/V Marlin, for example, the plaintiff railroad company owned a bridge which the defendant shipping company damaged after its carrier boat collided into it. No. 2:08cv134, 2009 WL 3363983, at \*6 (E.D.Va. Oct. 9, 2009). The plaintiff offered a marine surveyor to testify as an expert witness regarding the pre-incident value of the fendering system of the plaintiff's bridge. The defendant moved to exclude the testimony of the plaintiff's expert on the ground that the expert was "not qualified to offer an opinion on the pre-incident value of the west fendering system because it is outside his area of expertise and there is no factual foundation for his testimony." Norfolk, 2009 WL 3363983, at \*4. The court found that while the expert had "extensive experience evaluating the nature and extent of damage and estimating the costs of repairs *after* an incident" there was no evidence that the expert had "any experience, training, or specialized knowledge in estimating the *pre-incident* value of a structure." Id. at \*6 (emphasis added) (quoting Shreve v. Sears, Roebuck & Co., 166 F. Supp. 2d 378, 391 (D. Md. 2001) ("The fact that a proposed witness is an expert in one area, does not *ipso facto* qualify him to testify as an expert in all related areas.")). Consequently, the court granted the defendant's motion to exclude the plaintiff's expert's testimony. Id. at \*7.

Similarly in Oglesby v. General Motors Corp., the plaintiff sued the defendant alleging that he was injured by a defective plastic hose connector between his car's radiator and radiator hose. 190 F.3d 244, 247-49 (4th Cir. 1999). The defendant was the manufacturer of the car. The plaintiff presented a former professor of mechanical engineering to testify as an expert. The expert "had previously consulted in an array of cases involving the mechanical design and safety

of various industrial products, but he had no particularized experience or expertise in evaluating either automobile manufacturing processes or the strength of plastic automobile component parts." Oglesby, 190 F.3d at 247. Applying Federal Rule of Evidence 702, the district court ultimately refused to consider the expert's testimony because it found it to be nothing more than mere speculation. Id. at 248. The court reasoned "while plaintiff's expert is clearly qualified as an expert on various engineering principles, his proposed opinion in this case lacks any probative value and would be of no assistance to the trier of fact . . . [the expert's] proposed testimony lacks the reliability, foundation and relevance necessary for admissibility in this case [under Federal Rule of Evidence 702]. The expert has shown no knowledge of the manufacturing process, the radiator's composite makeup, nor has he conducted any meaningful testing or analysis." Id. at 248-49. The Fourth Circuit upheld the district court's finding on appeal. Id. at 251.

Davis describes himself as a "corrosion engineer." Vennos Aff. at Ex. C, Davis Depo. at 37:11. Davis' resume indicates that he received an M.S. in Metallurgy and Corrosion, and that he has forty years of experience with "metallurgical/corrosion engineering, mechanical engineering areas and . . . *forensic* engineering failure analysis." Vennos Aff. at Ex. D, Davis Report (emphasis added). In sum, Davis' credentials indicate that he has knowledge and expertise as to what occurs after a corrosive agent comes into contact with a solid surface that is corrodible.

However, Davis is not a chemist, let alone an expert on the chemical composition of corrosive drywall, or on the chemical mechanism(s) involved in the off-gassing of reduced sulfur compounds from corrosive drywall. In other words, Davis cannot opine (as he admits) as to what triggers off-gassing of reduced sulfides to occur from corrosive drywall (i.e., it may lay

dormant for some period of time until it begins off-gassing, and it may off-gas for some period of time and then stop, and then restart again), nor can he opine (as he admits) as to what level of reduced sulfides must be generated in order for corrosion on metallic surfaces to begin, nor can he opine (as he admits) as to the mechanism by which corrosion initiates on metallic surfaces when exposed to reduced sulfide gases emitted by corrosive Chinese drywall. Vennos Aff. at Ex. C, Davis Depo. at 43:20-44:3; id. at 105:1-9; id. at 24:21-23; id. at 106:23-107:5. Just as in Norfolk & Portsmouth Belt Line R.R. Co. v. M/V Marlin, Davis purportedly knows what happens *after* a product starts to corrode – he does not have the expertise to determine what happens *before* corrosion occurs. No. 2:08cv134, 2009 WL 3363983, at \*6 (E.D.Va. Oct. 9, 2009). This is especially true in the context of corrosive drywall where he cannot opine as to what triggers corrosive drywall to off-gas, or what either the level of reduced sulfides necessary in order to initiation corrosion or the mechanism by which corrosion initiates.<sup>2</sup> As such, Davis' opinion as to when corrosion initiated should be precluded based on a lack of expertise in the applicable field of knowledge. Oglesby v. General Motors Corp., 190 F.3d 244, 247-49 (4th Cir. 1999).

### **C. Davis' Opinion Regarding When Corrosion Commenced On The Microscopic Level Is Irrelevant And Should Be Precluded.**

Federal and state courts uniformly hold that the physical loss requirement in insurance policies requires more than some microscopic physical change in property, and the physical change must be “distinct and demonstrable.” Columbiaknit, Inc. v. Affiliated FM Ins. Co., 1999 U.S. Dist. LEXIS 11873 at \*18 (D. Or. Aug. 4, 1999) (granting insurer’s motion for summary judgment in part). The plaintiff in Columbiaknit alleged that all of the clothing and fabric in a

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<sup>2</sup> Moreover, specific to this matter, Davis never physically observed any of the corrosion on the metallic surfaces of items in the 74 homes until most of the homes had been fully remediated, anywhere from 2-3 years after the drywall was installed. Therefore, there is no evidence to suggest that Davis observed initiation of corrosion in any of the 74 homes such that he could render an opinion as to when corrosion initiated based on his observations.

warehouse suffered a direct physical loss due to mold and water damage. However, the court determined that if the clothing was simply exposed to elevated levels of spore counts, this would not rise to the level of physical loss:

The recognition that physical damage or alteration of property may occur at the microscopic level does not obviate the requirement that physical damage need be distinct and demonstrable.

...  
The mere adherence of molecules to porous surfaces, without more, does not equate [to] physical loss or damage.

Id. at \* 18; see also Universal Image Prods. v. Chubb Corp., 703 F. Supp. 2d 705, 710 (E.D. Mich. 2010) (granting summary judgment to insurer where presence of mold that did not render the property uninhabitable did not constitute direct physical loss); Mastellone v. Lightning Rod Mut. Ins. Co., 175 Ohio App. 3d 23 (Ohio Ct. App., Cuyahoga County 2008) (affirming lower court's ruling that dark staining from mold did not constitute "physical loss"). Even in cases where courts find that odor constitutes direct physical loss, the odor must be at a level that renders the property uninhabitable. See, e.g., Western Fire Ins. Co. v. First Presbyterian Church, 437 P.2d 52 (Colo. 1968) (odor of gasoline inside church constituted physical loss because it rendered church uninhabitable and incapable of being used for its intended purpose); Farmers Ins. Co. v. Trutanich, 858 P. 2d 1332 (Or. App. 1993) (odors in apartment from methamphetamine cooking operation constituted direct physical loss where apartment could no longer be occupied).

Here, the insurance policies at issue state that the insurer will pay "those sums that the insured becomes legally obligated to pay as damages because of . . . 'property damage' to which this insurance applies." (Rec. Doc. 22, Aff. of W. Makimoto, attaching policies of insurance at issue here, Exhibits A-D at p. 1, Section I.1.a.) The term "Property damage" is defined in the policies as:

Physical injury to tangible property, including all resulting loss of use of that property. All such loss of use shall be deemed to occur at the time of the physical injury that caused it.

Id.

Davis opines that there are two phases of corrosion, initiation (microscopic and not visible without a microscope) and propagation (macroscopic and visible to the naked eye):

And there's -- there's really a macroscale and a microscale environment that we are talking about here. Corrosion is generally divided into two phases. One is the initiation, which is the start of the microscale, not visible to the eye, but on a microscopic scale on the metal surface. That's when the initiation process starts. Once that has begun, the propagation continues, which is the penetration into the metal. And when the metal thickness has been fully penetrated, that's when failure occurs. So, the two phases of the corrosion process are initiation and propagation.

Davis Depo. at 40:20-41:8. Davis admits that the onset of corrosion that is visible and distinct would not occur upon installation of the drywall, and would, in fact vary with many variables. Vennos Aff. at Ex. C, Davis Depo. at 73:12-15 ("Q: Once initiation on a microscopic level begins, does it progress as a uniform and constant rate? A: Probably not."); id. at 135:8-16 (once initiation occurs, propagation does not continue in a linear fashion). Therefore, Davis' opinion that corrosion begins when drywall is installed is limited to the *initiation* of corrosion *on a microscopic scale*:

I think they all began soon after, from a -- certainly from a microscopic standpoint. But to be noted as a visible corrosion deposit that could be seen with the unaided eye inspection, as I did in the examination of these coils, there would be some variability up to that level, but I think microscopic initiation occurred in all cases immediately.

Id. at 70:19-71:2

Because (1) physical injury is required before coverage is triggered; (2) physical injury means more than some microscopic activity at the surface of property that is the subject of the insurance policies; and (3) Davis' opinion that corrosion begins when drywall is installed is

*limited to when microscopic initiation* of corrosion begins, Davis' opinion as to when corrosion begins is irrelevant and should be precluded.

### **III. CONCLUSION**

For the foregoing reasons, Defendants respectfully request that the Court preclude Plaintiff's expert, Gerald Davis, from testifying as to when corrosion initiated in the 74 homes that are the subject of the complaint.

Respectfully submitted,

/s/

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**C E R T I F I C A T E**

I hereby certify that on the 3<sup>rd</sup> day of June, 2011, a copy of the foregoing was hand-delivered to Plaintiff's counsel and I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will send notification of such filing to the following:

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